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Is Inexpensive Credit a Bargain for Small Farmers? The Recent Brazil Experience

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Credit alone or in combination with supervision has been a major part of programs aimed at increasing small-farmer incomes in less-developed areas. A few countries with extensive banking systems, including Brazil, have attempted to reach these operators by sharply expanding the total amount of agricultural credit. This has been done on the assumption that some of these funds would be provided to those previously unable to obtain loans. Other countries have stressed specially packaged credit programs which are conducted at least partially outside the normal banking system. Supervised credit programs in Latin America, small farmer credit activities in South Viet Nam and Indonesia, and cooperative credit efforts in parts of Africa and East Pakistan are examples of this approach.

To date, the problems of extending credit to small farmers have been largely viewed from the demand side. Emphasis has been placed on the conservative nature of small farm operators, their unwillingness to change or assume debt risks, their lack of knowledge on how to use credit, their fear of dealing with formal credit agencies and the absence of profitable investment alternatives on their farms. Many of the special credit programs have been focused on some aspects of these problems, and almost all have included a low interest

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rate policy. Little attention, however, has been given to problems on the supply side of credit. In the following discussion we suggest that major credit distribution problems may exist. We will also argue that some adjustments in current policies might substantially increase the flow of credit to small farmers through regular banking channels. We use information from Brazil to illustrate this argument.

Background on Agricultural Credit in Brazil

Since the early 1950's Brazil has emphasized various market incentives to stimulate agricultural development. Minimum farm prices, exchange rate subsidies, trade barriers, tax exemptions and rebates, and inexpensive farm credit have been some of the measures adopted.[1/] Especially since the mid-1960's, a substantial increase in the total amount of institutional agricultural credit also has been a prominent agricultural development tool.

Prior to 1964 four national banks and eight state banks provided most of the institutional agricultural credit. The Bank of Brazil dominated this lending and provided 85 percent of the total in the early 1960's.[2/] By 1970 this figure had dropped to less than half because of policies which persuaded private banks, state banks and other national banks to increase substantially their agricultural lending. A part of this increase was related to the Central Bank's Resolution 69 of 1967 which required all commercial banks to allocate

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1/ Further background on Brazil's recent agricultural development policies can be found in: G. Edward Schuh, The Agricultural Development of Brazil, (New York: Praeger, 1970); Gordon W. Smith, "Brazilian Agricultural Policy, 1950-67," in The Economy of Brazil, edited by H. Ellis, (Berkeley: Univ. of California Press, 1969), pp. 213-265; and Peter T. Knight, Brazilian Agricultural Technology and Trade (New York: Praeger, 1971).

2/ Additional information on agricultural credit in Brazil can be found in: Banco Central do Brazil, Estudio De Credito Agricola No Brazil: Relatorio Da Pesquisa Institucional (Rio De Janeiro: Banco Central do Brazil, 1969) and Judith Tendler, "Agricultural Credit in Brazil," unpublished report dated October 1969, on file Agency for International Development, Brasilia, Brazil.

at least 10 percent of their deposits to agricultural credit.[3] Additional funds for agricultural credit were provided by external assistance.[4]

As can be noted in Table I the real value of institutional agricultural credit in Brazil increased by more than a factor of four from 1960 to 1970. This resulted in a sharp increase in the credit-to-agricultural-output ratio from .13 in 1960 to .41 in 1970. Brazil also substantially increased the amount of agricultural credit available in comparison with non-agricultural credit. In 1960 only eleven percent of the total credit portfolio went to agriculture, while in 1970 one-quarter went to this sector.

The Rural Credit Law of 1965 is the basic enabling legislation defining current agricultural credit policy.[5] Four objectives are specified in the Law: (1) to stimulate farm investment, (2) to provide additional working capital to farmers, (3) to strengthen the economic position of farmers, particularly small and medium sized units, and (4) to encourage the application of modern technology to agriculture. In addition to the large overall credit buildup, Brazil has mainly stressed manipulation of interest rates and credit rationing to achieve these objectives.

3/ At best, the results from this resolution appear to have been mixed: for a more detailed discussion see Judith Tendler, "Agricultural Credit in Brazil - Part II," unpublished report dated January 1970, on file Agency for International Development, Brasilia, Brazil.

4/ Dale W. Adams, "Agricultural Credit in Latin America: A Critical Review of External Funding Policy," American Journal of Agricultural Economics, May 1971, p. 163.

5/ Law 4,829 of 5 November 1965. Additional Resolutions (5 of 1965, 69 of 1967, 97 of 1968 and 181 of 1971) have assisted the implementation of the basic law.

Interest Rate Policy

Interest rates on bank credit in Brazil have been closely regulated since at least 1933. Enactment of a usury law in that year prohibited applying rates above 12 percent per year.[6/] In 1938, a special division within the Bank of Brazil, CREAI, was organized for the purpose of providing official credit at subsidized rates to Brazilian Agriculture. Since 1950 the nominal interest charged on agricultural credit has been less than the annual rate of inflation, resulting in a negative real charge for the use of agricultural credit. The 12 percent interest ceiling on agricultural loans was enforced until 1967. A number of devices, however, were used to circumvent effectively the ceiling. In a few cases additional interest was collected sub rosa. In others, banks used tied accounts which required the borrower to sign for a loan for more than he received. The balance of the loan was left on deposit with the bank and the borrower required to pay interest on the unused money. More commonly, service charges were loaded on top of the interest to raise credit costs.

The 1965 Banking Reform Law reaffirmed the 12 percent rate but added the additional proviso that interest charges on agricultural credit could not exceed 75 percent of the rate for normal commercial lending. The Central Bank Resolution 69 of 1967 authorized a maximum of 6 percent administration and inspection fee, in addition to the 12 percent, for agricultural loans greater than 50 times the minimum salary.[7/] Small borrowers were given

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6/ Mario Henrique Simonsen, "The Problem of Interest Rates in Brazil," Bolsa Review, (Bank of London and South America, Ltd.), December, 1967, pp. 648-656.

7/ Fifty minimum salaries equaled Cr$11,280 in mid-1971. This equaled $2,062 at an exchange rate of Cr$5.47, in effect September, 1971.

Table I

Institutional Agricultural Credit in Brazil 1960-1970

Year	Agricultural Production Loans Made During Year: Number[1/]	Index 1960=100	Value[1/]	Index 1960=100	Ratio of Agricultural Credit to Total Credit[2/]	Net Internal Product From Agriculture[3/]	Ratio of Credit to Output
	in '000s		Million 1969 Cr$			Million 1969 Cr$	
1960	231	100	1.811	100	0.11	13.611	0.13
1961	285	123	1.966	108	0.11	15.240	0.13
1962	441	190	2.625	145	0.14	17.830	0.15
1963	549	237	2.293	126	0.14	15.723	0.15
1964	771	334	2.924	161	0.19	17.084	0.17
1965	666	288	2.189	121	0.14	17.793	0.12
1966	856	371	2.715	150	0.16	15.773	0.17
1967	1,029	445	3.349	185	0.18	16.722	0.20
1968	1,500	649	4.106	227	0.18	16.755	0.25
1969	1,145	496	6.489	358	0.23	17.760*	0.37
1970	1,191	515	7.660	423	0.25	18.826*	0.41

1/ Various Central Bank of Brazil reports.

2/ Total credit is equal to the domestic-credit-claims-on-private sector figure published by International Monetary Fund in International Financial Statistics. Data were adjusted to 1969 prices using the General Price Indix published by the Getulio Vargas Foundation.

3/ Center of National Accounts, Instituto Brasileiro de Estatistica - Fundacao Getulio Vargas (IBGE-FGV) Conjuntura Economica, Vol. 25, No. 9 (Rio de Janeiro: FGV, August 1971) pp. 107-111. Data were adjusted to 1969 prices using the General Price Indix published by the FGV.

* Projected from the 1968 figure by compounding a 6 percent growth rate.

an even larger concession.[8/] Regarding loans valued at less than 50 minimum salaries, the commission and inspection fees were limited to 2 percent or less. Borrowers of small amounts thus, generally, paid 13 to 14 percent while larger borrowers paid 17 to 18 percent per annum. With inflation of about 20 to 25 percent per year in the late 1960's these rates resulted in significant, negative real rates of interest.

Interest rate incentives have also been used to accelerate the diffusion of modern inputs. In April 1966 credit was made available for fertilizer purchases at zero nominal rates of interest to the borrowers through a program called FUNFERTIL.[9/] Until August 1968 the full amount of the interest charge was subsidized. From August 1968 to mid-1970 the interest rate subsidy was limited to charges up to 14 percent.[10/] In August 1970 a new program, FUNDAG, replaced FUNFERTIL and was aimed at stimulating the use of a number of modern inputs: fertilizer, lime, livestock minerals and protein supplements, improved seed, artificial insemination, and agricultural chemicals. Under this program farmers paid only 7 percent annual interest on credit-used to purchase these inputs.

A recent announcement by the Bank of Brazil indicated that a policy providing for interest-free loans for some inputs and for highly subsidized rates for other production costs (farm equipment, etc.) would be applied in the

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8/ The interest rates and commissions quoted here are on loans covering operating expenses repayable within one year. Slightly different charges are allowed on loans for longer terms.

9/ This program was called the Fundo de Estimulo Financeiro ao Uso de Fertilizantes e Suplementos Minerais (FUNFERTIL).

10/ Further information on results from FUNFERTIL can be found in João Braga Costa, "Agricultural Inputs: Fertilizer," unpublished report prepared for USAID/Brazil, dated August 5, 1969, on file The Agency for International Development, Brasilia, Brazil.

economically depressed Northeast.[11]

Results from Credit and Interest Rate Policies

Brazil's agricultural credit program during the 1960's has been associated with some notable successes. Cultivated land, for example, increased from 26 million hectares in 1960 to 35 million in 1970, and chemical fertilizer use jumped from 300 thousand to 820 thousand metric tons.[12] Overall agricultural yield indexes rose from 112 in 1960 to 136 in 1970. Over 100 thousand tractors for agricultural use were purchased by farmers from 1960 to 1970. Wheat output has quadrupled during the past decade. Less spectacular, but nonetheless impressive increases in output of soybeans, corn, rice, oranges and poultry have also taken place in the past 10 years.

The huge increase in institutional agricultural credit at concessional interest rates, in conjunction with other price policies, have clearly played an important role in facilitating these increases in productive capacity as well as output. It appears, therefore, that at least three of the four objectives specified in the 1965 Rural Credit Law have been at least partially achieved: farm investment has been stimulated, additional working capital has been provided to farmers, and use of modern technology in agriculture has been encouraged. These are substantial accomplishments.

There are reasons to believe, however, that little progress has been made toward the objective of improving the economic position of small and

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11/ Journal do Commercio, Recife, Pernambuco, November 6, 1971.

12/ These figures are taken from: William Charles Nelson, "An Economic Analysis of Fertilizer Utilization in Brazil" unpublished Ph.D. Dissertation, Department of Agricultural Economics and Rural Sociology, The Ohio State University, 1971 and John Stitzlein, "The Economics of Agricultural Mechanization in Southern Brazil" unpublished Ph.D. Dissertation, Department of Agricultural Economics and Rural Sociology, The Ohio State University, 1972.

medium sized farm units through credit. Results from a general sample of 392 farm operators selected and interviewed in the states of Rio Grande do Sul and Santa Catarina in 1965 and reinterviewed in 1969 show this rather clearly. As can be noted in Table I, during this period the real value of aggregate institutional agricultural credit in Brazil more or less tripled. The availability of agricultural credit in the two states studied increased at a slower pace, but more than doubled during 1965 to 1969.[13/] Institutional credit use among the 392 farms studied increased at a slower rate than was indicated by the state and national figures. Overall the farmers studied increased their institutional credit use, in real terms, by 73 percent.[14/]

The increase in credit use, however, was narrowly concentrated. Only twenty-three of the farmers received loans of 5 thousand new cruzeiros in 1965. Nevertheless, they absorbed almost three-quarters of the total increase in the institutional credit available for all 392 farmers by 1969. It is also interesting to note that the number of institutional loans granted all 392 farmers essentially did not change between 1965 and 1969. Value-wise there was heavy concentration and loan-wise there was little diffusion.[15/]

An earlier study of the distributional effects of a special Brazilian

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13/ Instituto Brasileiro de Estatistica (IBGE), Anuario Estatistico do Brazil, volumes for 1966 & 1970, (Rio de Janeiro: IBGE, 1967 & 1971) p. 268 and pp. 448-449, respectively.

14/ Dale W. Adams and others, "Credit-Brazil" unpublished Research Note, Number 8, on Agricultural Capital Formation and Technological Change, Department of Agricultural Economics and Rural Sociology, The Ohio State University, January 28, 1971.

15/ Further information on changes in credit use among the small-to-medium sized operators can be found in Joseph L. Tommy, "Credit Use and Capital Formation on Small-to-Medium Size Farms in Southern Brazil, 1965 to 1969" unpublished M.S. Thesis, Department of Agricultural Economics and Rural Sociology, The Ohio State University, 1971.

credit-fertilizer program begun in 1965 suggests similar results. A very limited number of farmers absorbed most of the additional credit provided for fertilizer purchases. Many of these borrowers had been substantial institutional borrowers previously.16/

An analysis of the agricultural loan portfolio of the Northeast Development Bank (BNB) servicing Northeast Brazil suggests that not only have additional credit funds not spread, but there even may have been some contraction. In the late 1960's the BNB provided approximately one-quarter of the institutional agricultural credit in the Northeast. From 1960 to 1967 BNB steadily increased the number of loans to agriculture as well as total value loaned. Almost 29 thousand individual agricultural loans were made in 1967 by the BNB. 17/ This number decreased very sharply, however, over the next three years, and in 1970 less than 11 thousand loans were made. This was fewer agricultural loans than the Bank made in 1961 when its agricultural loan portfolio value was only about 45 percent of its 1970 value in real terms. From 1968 to 1970 the BNB eliminated from its portfolio over 12 thousand of its 19 thousand clients who borrowed less than 50 minimum salaries.18/ At the same time it increased the number of agricultural loans in the 1,500 minimum salaries class by more than three times. These studies and data strongly suggest that Brazil's recent credit policy has had little positive impact

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16/ Donald M. Sorensen and others, "An Evaluation of the CNCR Fertilizer Loan Program in Brazil," AFC Research Report 118, Department of Agricultural Economics and Rural Sociology, The Ohio State University, December, 1967.

17/ Data and information which immediately follows are from unpublished worksheets from the Division of Rural Credit, Bank of Northeast Brazil.

18/ Some of the decrease in numbers was due to drought conditions and some shifting of small borrowers to cooperative sources of credit.

on credit problems of small-to-medium sized farms. The lack of results in this regard are especially perplexing in light of the size of the overall credit increase. Individual banks can hardly be blamed, however, as they are following a perfectly rational course to minimize costs. The problem lies with the policy which makes lending to small operators expensive.

Reasons for Loan Concentration

A number of policymakers in Brazil still feel that the lack of effective demand among operators of small-to-medium sized farms for production credit is the main reason for the concentration of loans. Some conclude that "spoon feeding" through supervised credit programs is the only way to increase significantly credit demand among this group.[19/] But Erven and Rask report that small farmers in one area of southern Brazil rapidly increased their borrowing from banks once credit became available.[20/] Rao reported that small farms had much higher economic returns at the margins to inputs which credit typically purchases than did large farm operators who obtained most of the credit.[21/] He also found no positive relationship between credit use and family consumption even among the smallest farms studied.

19/ For a description of one such program in Brazil see: Jose Paulo Ribeiro and Clifton R. Wharton Jr. "The ACAR Program in Minas Gerais, Brazil," in Subsistence Agriculture and Economic Development, edited by Clifton R. Wharton Jr. (Chicago: Aldine, 1969) pp. 242-438.

20/ Bernard Erven and Norman Rask, "Credit Infusion as a Small Farmer Development Strategy--The Ibiruba Pilot Project in Southern Brazil", Economics and Sociology Occasional Paper No. 48, Department of Agricultural Economics and Rural Sociology, OSU, December, 1971.

21/ Bodepudi Prasada Rao, "The Economics of Agricultural Credit-Use in Southern Brazil", unpublished Ph.D. dissertation, Department of Agricultural Economics and Rural Sociology, The Ohio State University, 1970

We tentatively conclude from these studies that a significant reservoir of unsatisfied credit demand may exist in the rural area of Brazil, which the current credit policy is not addressing. This conclusion presumes favorable factor price ratios and technologies, the availability of complementary inputs and suitable institutional arrangements for profitably utilizing credit even at the current highly subsidized interest rates. Some or all of these conditions may exist in various regions of Brazil, but the evidence is scattered and/or unavailable in most cases for any meaningful assessment. With the recent increase in amount of credit available in the system it no longer seems plausible to rationalize this on the basis of overall credit shortage. It is also difficult to continue to explain the skewed credit distribution by the "pistolao" dogma, that is, certain people receive credit because they have political influence with the bankers. Influence plays some part in any human interaction, but it probably explains only a small part of Brazil's credit distribution problem. Credit pricing policy, plus some additional administrative procedures appear to be the most important factors in determining the severe credit rationing procedures used by Brazilian banks toward small agricultural borrowers.

Economic logic suggests that credit which is negatively priced in real terms, has few storage costs or risks, is durable, and is easily exchanged for other items will have a near horizontal demand schedule. Interest rates have a very restricted role to play in allocating credit under these circumstances. In fact, interest charges may be irrelevent to some borrowers, particularly smaller ones, as they cannot get credit at any price. A shift to the right of the supply schedule will be absorbed mainly by those who are first into the credit market. At negative interest rates farmers can afford to use loans for projects whose rates of return are near zero. As long as the ratio of return is greater than the real cost of borrowing it will pay to invest. Under these excess demand conditions, and to the extent they are legally allowed, banks will concentrate their funds in large loans to minimize average administration costs. They will further try to minimize operational risks by lending mainly to those operators with high equity-to-credit ratios. If banks are forced to charge less interest on small than larger loans, this will provide further incentive to increase loan size.

An interesting associated point is that low interest rates on credit for small farmers have often been justified in the past because policymakers felt these farmers had high elasticities of credit demand with respect to interest rates. Little empirical evidence has been generated to substantiate this point, and we feel the proposition is highly suspect. On the basis of the Brazilian experience, however, it appears that banks have very interest-sensitive supply schedules. The low interest rate policy may not be needed to induce small farmers to use credit where it can be profitably applied. But, the inexpensive credit policy may seriously thwart the incentives of the lender to make loans to these farmers who were the intended beneficiaries of this policy!

Conclusions and Policy Recommendations

The Brazil experience reaffirms the important role of credit in agricultural development. It teaches the lesson, however, that major policy adjustments are needed in order to channel more credit to small farmers. It also hints that problems of credit distribution rather than demand are important in explaining the current skewed allocation of credit. Overall supply of credit does not seem to be the major problem in Brazil. Rather, the lack of appropriate policies which provide banks with economic incentives to lend to small farmers appears to be the main constraint.

Incentives for the banks could be provided through any one of a number of policy alternatives. As a minimum, credit charges on all sizes of agricultural loans should be equalized in Brazil; banks should not be penalized for making small loans. It appears politically impossible to charge higher rates of interest on small loans than large loans. But higher real interest charges across-the-board for agricultural credit might achieve many of the same purposes. Increased credit charges to large borrowers may force them to reduce their borrowing substantially and expand the funds available for small loans. Banks could also be encouraged to make small loans by a differential discount rate policy by the Central Bank; that is, a larger discount spread might be allowed on small loans than on large loans.

Efforts to lower the administrative costs of small loans may also provide added incentive. Many banks in Brazil require almost the same amount of paper work on a one hundred dollar loan as on a ten thousand dollar loan. Few bank managers, nevertheless, express serious concern about the willingness of small borrowers to repay loans. Some in fact feel that small borrowers are more likely to repay than large borrowers. New administrative procedures which required less documentation on small loans along with modern data processing might bear fruit. Loans up to a certain limit might be made almost automatically to borrowers with good credit rating with the bank, to applicants for loans recommended by extension agents, and to people who have several letters of recommendation from borrowers in good standing with the bank. Loosening of lending procedures would likely result in some increase in default rates, but this loss could be more than covered by lower administrative costs. If it were found that default risks were a serious block to banks lending to small farms a national default insurance program might eliminate much of this risk.

Improving the incentive system for banks to loan to smaller borrowers will not resolve all small farmer credit problems. It should, however, clear away a good bit of the fog which currently surrounds this topic. When banks begin to channel vigorously credit to small farmers at realistic prices, it should be possible to identify more clearly demand constraints caused by lack of profitable investment alternatives, shortage of appropriate technology, adverse tenure systems, effects of unstable marketing conditions, and need for supervision or special lending arrangements. The importance of these issues cannot be clearly determined until the distribution of credit is rationalized and current credit policies substantially adjusted. Inexpensive credit does not appear to be a bargain for small farmers.